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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 14A

Information Required in Proxy Statement  
Schedule 14A Information

Proxy Statement Pursuant to Section 14(a) of the  
Securities Exchange Act of 1934

Filed by the Registrant  Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant to §240.14a-12

**AMCI Acquisition Corp. II**  
(Name of Registrant as Specified In Its Charter)

N/A  
(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
- Fee paid previously with preliminary materials.
- Fee computed on table in exhibit required by Item 25(b) per Exchange Act Rules 14a6(i)(1) and 0-11.
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On February 3, 2023, AMCI Acquisition Corp. II (“AMCI”) issued the following press release announcing it convened and then adjourned, without conducting any other business, AMCI’s adjourned special meeting of its stockholders.

**AMCI Acquisition Corp. II Adjourns Special Meeting of Stockholders  
Until February 6, 2023**

**GREENWICH, Conn. (February 3, 2023)** – AMCI Acquisition Corp. II (Nasdaq: AMCI, AMCIU and AMCIW) (“AMCI”), a special purpose acquisition company, today announced that it convened and then adjourned, without conducting any other business, the previously adjourned special meeting of stockholders of AMCI (the “special meeting”), scheduled to occur on Friday, February 3, 2023, at 3:00 p.m., Eastern Time, until Monday, February 6, 2023, at 3:00 p.m., Eastern Time, at <https://www.cstproxy.com/amciacquisitionii/2023>.

The special meeting is being held to vote on the proposals described in AMCI’s definitive proxy statement, filed with the U.S. Securities and Exchange Commission (the “SEC”) on January 11, 2023 (the “definitive proxy statement”), relating to the proposed business combination with LanzaTech NZ, Inc. (“LanzaTech”). AMCI and LanzaTech expect to close the business combination shortly after the special meeting, subject to the approval of AMCI’s stockholders at the special meeting and other closing conditions.

***About LanzaTech***

Headquartered in Skokie, Ill., LanzaTech transforms waste carbon into materials such as sustainable fuels, fabrics, packaging, and other products. Using a variety of waste feedstocks, LanzaTech’s technology platform highlights a future where consumers are not dependent on virgin fossil feedstocks for everything in their daily lives. LanzaTech’s goal is to challenge and change the way the world uses carbon, enabling a new circular carbon economy where carbon is reused rather than wasted, skies and oceans are kept clean, and pollution becomes a thing of the past. For more LanzaTech visit <https://lanzatech.com>.

***About AMCI Acquisition Corp. II***

AMCI Acquisition Corp. II is a blank check company formed for the purpose of effecting a merger with a business focused on decarbonizing the heavy industrial complex and transitioning the global energy mix to a lower carbon footprint. AMCI’s sponsor is an affiliate of the AMCI group of companies. AMCI invests in and operates industrial businesses focused on natural resources, transportation, infrastructure, metals, and energy, with an existing portfolio of 20 companies located around the world. AMCI is led by Chief Executive Officer Nimesh Patel, President Brian Beem, and Chief Financial Officer Patrick Murphy.

***Important Information About the Business Combination and Where to Find It***

AMCI has filed a registration statement on Form S-4 (the “Registration Statement”) with the Securities and Exchange Commission (the “SEC”) which includes both a prospectus with respect to the combined company’s securities to be issued in connection with the Business Combination and a proxy statement distributed to AMCI’s stockholders in connection with AMCI’s solicitation of proxies for the vote by its stockholders in connection with the Business Combination and other matters as described in the Registration Statement. AMCI urges its investors, stockholders and other interested persons to read the definitive proxy statement/prospectus, as well as other documents filed by AMCI with the SEC, because these documents contain important information about AMCI, LanzaTech and the Business Combination. AMCI has mailed the definitive proxy statement/prospectus to its stockholders of record as of December 28, 2022, the record date for voting on the proposed business combination. Stockholders can also obtain a copy of the Registration Statement, including the definitive proxy statement/prospectus, as well as other documents filed with the SEC regarding the Business Combination and other documents filed by AMCI with the SEC, without charge, at the SEC’s website located at [www.sec.gov](http://www.sec.gov) or by directing a request to: AMCI Acquisition Corp. II, 600 Steamboat Road, Greenwich, CT 06830.

***Participants in the Solicitation***

AMCI and LanzaTech and their respective directors and executive officers may be considered participants in the solicitation of proxies with respect to the proposed Business Combination under the rules of the SEC. Information about the directors and executive officers of AMCI is set forth in the Registration Statement and included in the definitive proxy statement/prospectus. Information regarding the persons who may, under the rules of the SEC, be deemed participants in the solicitation of AMCI stockholders in connection with the proposed Business Combination is set forth in the Registration Statement and included in the definitive proxy statement/prospectus. Stockholders, potential investors and other interested persons should read the definitive proxy statement/prospectus carefully before making any voting or investment decisions. These documents can be obtained free of charge from the sources indicated above.

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## ***Forward-Looking Statements***

This press release includes forward-looking statements regarding, among other things, the plans, strategies and prospects, both business and financial, of AMCI and LanzaTech. These statements are based on the beliefs and assumptions of the management of AMCI and LanzaTech, respectively. Although AMCI and LanzaTech believe that their respective plans, intentions and expectations reflected in or suggested by these forward-looking statements are reasonable, neither AMCI nor LanzaTech can assure you that either will achieve or realize these plans, intentions or expectations. Forward-looking statements are inherently subject to risks, uncertainties and assumptions. Generally, statements that are not historical facts, including statements concerning possible or assumed future actions, business strategies, events or results of operations, are forward-looking statements. These statements may be preceded by, followed by or include the words “believes,” “estimates,” “expects,” “projects,” “forecasts,” “may,” “will,” “should,” “seeks,” “plans,” “scheduled,” “anticipates,” “intends” or similar expressions. The forward-looking statements are based on projections prepared by, and are the responsibility of, AMCI’s management and LanzaTech’s management, respectively. These forward-looking statements are not guarantees of future performance, conditions or results, and involve a number of known and unknown risks, uncertainties, assumptions and other important factors, many of which are outside the control of AMCI and LanzaTech, that could cause actual results or outcomes to differ materially from those discussed in the forward-looking statements. New risk factors that may affect actual results or outcomes emerge from time to time and it is not possible to predict all such risk factors, nor can AMCI or LanzaTech assess the impact of all such risk factors on its business, or the extent to which any factor or combination of factors may cause actual results to differ materially from those contained in any forward-looking statements. Forward-looking statements are not guarantees of performance. You should not put undue reliance on these statements, which speak only as of the date hereof. All forward-looking statements attributable to AMCI, LanzaTech or persons acting on their behalf are expressly qualified in their entirety by the foregoing cautionary statements. AMCI and LanzaTech prior to the Business Combination, and the combined company following the Business Combination, undertake no obligations to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

## ***Non-Solicitation***

This press release shall not constitute a proxy statement or solicitation of a proxy, consent or authorization with respect to any securities or in respect of the proposed Business Combination and shall not constitute an offer to sell or a solicitation of an offer to buy any securities, nor shall there be any sale of securities, in any state or jurisdiction in which such offer, solicitation, or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction. No offer of securities shall be made except by means of a prospectus meeting the requirements of the Securities Act of 1933, as amended.

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